THE

HORTICULTURIST.

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CULTURE OF THE VINE IN EUROPE.

The United States Commission at the Universal Exposition of Paris in 1867 appointed a committee, composed of Marshall P. Wilder, Alexander Thompson, William J. Flagg, and Patrick Barry, to report on the culture and products of the vine. The report is given in the monthly publication of the Department of Agriculture, but with some typographical errors corrected we give the report almost entire, as we consider it of great value. Although the committee embraced four members, we believe the main credit of attending to the interests of our country on this subject is due to Messrs. Wilder and Barry, whose knowledge of the great interest felt by our people in the culture of the grape induced them to make extra exertions and obtain a *special* committee for examination and comparison of our American products with those of other countries.

"The exhibition of wines at the Universal Exposition of 1867 was large. Every wine-growing country of Europe, as well as Australia, Canada, California, and other sections of North and South America, were represented. As there were no jurors from the United States, our American wines were not subjected to so full and fair an examination as they were entitled to, and to remedy this omission a special committee, consisting of the undersigned, was appointed by the Board of Commissioners to make an examination of the wines of our own and other countries, and to report especially with reference to wine-making in America.

"As regards French wines, full reliance can not be placed on what is furnished to the American traveler at hotels or cafés, or even what is sold him at the shops, no matter what price he pays. It would, however, be doing French wines a great injustice to judge them by the qualities sold in this way, or exported to America. The great body of American consumers have palates as yet so unskilled, and the merchants of Bordeaux, and fabricators and imitators are so adroit, that it seems impossible for the honest wine maker here to come into such relations with the wine drinkers there as shall secure to the latter the benefits, sanitary and moral, which the French people themselves derive from the pure juice of the grape so abundantly produced in this country. It is not an unusual practice for dealers to buy of producers in the back country a coarse, deep red wine for 30 cents per gal-

lon, and a strong white wine for 45 cents per gallon, mix and bottle them, and send them abroad labeled with all the high-sounding names of 'Medoc,' to sell at enormous profits to unsuspecting foreigners.

"Farther south than Bordeaux, in the country about Montpelier and Bezires, an inferior article, but perfectly pure, can be obtained of the producer at five and six cents per gallon, or one cent per bottle. Of late years, and since the abatement of the grape disease, the production of France has been very large, the 4,000,000 of acres in cultivation yielding an average of 1,200,000,000 of gallons, which would give to every man, woman, and child in the country a half bottle-full every day, even after allowing 200,000,000 of gallons for exportation.

"Hungary, whose product is second to that of France only, can supply a wide range of varieties, and at prices extremely reasonable. As the Hungarian producers seem to know, as yet, but little of chemistry, we suppose their wines to be generally pure.

"Besides the sherry, of which we consume so largely, Spain has an abundant and rich vintage with which American consumers would be better acquainted if her merchants had more of the enterprise of those of Bordeaux.

"Portugal also produces plenty of excellent and pure wines of which we know little, for hardly a drop is allowed to leave the country without being so strongly brandied as to lose its character as a wine, and become rather a spirituous liquor. Port wine is repeatedly dosed with spirits until it contains at least as much as 24 per cent. of alcohol. Fifteen years' age is required before it is fit to drink, not because the wine is slow to ripen, but because the spirit needs to remain fifteen years before the disturbance it causes can subside, and the antagonistic ingredients of the mixture harmonize.

"Notwithstanding bold and persistent assertions to the contrary, it has been satisfactorily proven to your committee that the adulteration is made, not to preserve the wine, but solely to make it sweet and stimulating.

"As America is destined to become a great wine-producing country, her people ought to be better acquainted than they are with the higher grades of foreign wines, but they have as yet drunk so little of these, that their standard of excellence remains comparatively low. Now, except in California, none of the European vines will grow in America, and we are compelled to search in our forests, and develop in nurseries and vineyards the varieties which are in the future to be our reliance for competing with foreign producers, and finally, it is to be hoped, emancipating ourselves from them altogether. Of course, then, the higher our standard of taste is, that is, the higher our aim, the better will be our success.

"Our American vineyards compare very well with those of France, and so do our cellars, presses, and casks.

"SOIL AND EXPOSURE.

"The soil of Medoc, where stand 'Chateau Margaux,' 'Chateau La Fitte,' and 'Chateau La Tour,' is a bed of coarse gravel, among whose pebbles the eye can barely detect soil enough to support the lowest form of vegetable life. In the vicinity of Bezires, on the other hand, the land is rich and strong enough to yield any kind of a crop; yet Medoc grows wine that often sells for ten dollars per gallon, while that of Bezires sometimes sells for less than ten cents per gallon. In Burgundy there is a long hill on whose dark red ferruginous limestone sides a wretched thin covering of earth lies, like the coat of a beggar, revealing, not hiding, the nakedness beneath. Here stand little starveling vines, very slender and very low; yet here is the celebrated 'Clos Vaugeot,' and this is the hill, and these are the vines that yield a wine rivaling in excellence and value that of Medoc, and

to the fortunate proprietor the *Coté d'or* is what it signifies, 'a hillside of gold.' At its base spreads out a wide and very fertile plain, covered with luxuriant vines, whose juice sells from ten to twenty cents per gallon.

"If you go farther northward and examine the hills of Champagne, you will find them to be merely hills of chalk; and these instances only illustrate the rule derived not from them alone, but abundance of others, that, for good wine, you must go to a dry and meagre soil. Yet we should be sorry to have to extend the rule, and say that the poorer the soil the better the wine, for there are certainly very few patches of ground in America that can match in poverty the mountains of Champagne, the hills of Burgundy, or the slopes of Medoc.

"PREPARING THE GROUND, PLANTING THE VINES.

"This is probably as well understood in America as in France. In Burgundy, Champagne, and some other districts it is the practice to renew the vigor of the vines by laying down the cane and rooting the plant in a new place, which quite breaks up the original lines, so the plow can not be used. This is doubtless a good way to renew the strength of the plant, but it is objected to by high authority on the assumption that the older the stalk is the better the wine will be; on the other hand, Champagne vine-dressers have attributed to this practice in a great measure their almost total exemption from the vine disease.

"But then, again, others attribute that exemption to the general and long established custom of spreading over the vineyards a bituminous shale containing sulphur, a well-known antidote; and here we would recommend most strongly to our countrymen a renewed and sustained effort to combat mildew with sulphur. The experience of France and other countries is entirely in its favor, and its use is still felt to be necessary, and is still kept up.

"We think Americans have not been thorough enough, and patient enough. Let them try again, and this time let them begin early, and to be sure to follow carefully these rules on the subject, which have been hitherto much better promulgated than observed. On rich and level land, a common plan in some districts is to set out double rows of vines at wide intervals, in fields chiefly devoted to other crops. The free exposure to sun and air thus secured seems largely to augment the yield, and this will be understood by any one who has noticed the superior productiveness of such of his vines as grow bordering on a wide alley or other open space. This is very different from planting vegetables, etc., among the vines, which is a bad practice.

"WIRE TRELLIS.

"These are becoming quite popular here, notwithstanding the cheapness of wood. The size of wire preferred is No. 16, and but two wires are used. They are stretched to strong posts set twenty feet apart, passing intermediately through holes of smaller posts or stakes. On the lower line, about eighteen inches from the ground, the fruit-bearing wood is trained, while the upper line, about eighteen inches above the other, supports the new wood. Many prefer to allow the fruit-bearing cane to do service for two years, instead of one only. There is do doubt that with wire trellises the pruning, tying, pinching off, etc., can be much more cheaply done than where the training is to stakes, and from the way the clusters depend from the horizontal cane, it is easy to see that there must be also a superior access of sun and air, and a greater ease in gathering the vintage.

"WINTER PROTECTION.

"It is a common practice to go through the vines with a plow every fall, and throw up a good ridge of earth against the stalks. The Hungarians have a more effectual way of guaranteeing against the cold of their rigorous winters, which is to lay the vines on the ground, cover them with straw, and

on the straw throw the earth; without this, it is said, they could produce no wine at all. Our native grapes are generally hardy, and will live wherever their fruit will ripen; but occasionally there is a severe season which seems to touch the very heart of the wood, and so enfeeble it that it falls an easy prey to disease. It was noticed that the mildew set in with great destructiveness after the two hard winters of 1854 and 1856.

"The thorough covering employed in Hungary would secure it against such occasional risks, and also might render it possible to grow European vines in our country. By its means, too, we could, perhaps, make the Scuppernong live in our Northern States, and obtain from it a sparkling wine, of foam and flavor unsurpassed. From these considerations and others, we recommend to the wine-makers of our more Northern States to lay down and thoroughly cover their vines regularly every fall; and to those in milder regions, to bank up the earth against the stalks as is done in France.

"We have derived most of our instruction in vine-dressing from the Germans, in whose native country there are no sunbeams to spare; and the celebrated Risling grape is said to hardly ever ripen, and thus, perhaps, we have been led to attach too much importance to letting the fruit remain on the vine as long as possible before gathering. If we have been in error, it would be well worth while to know it, for, besides the loss by shrinkage, the ravage of insects and birds, quadrupeds and bipeds, during the last fortnight of the vine-dressers' watchings, is most disheartening. Now, it is contended by good authority in France that early vintages are the best, and that it is important, not merely in regard to quantity but quality also, to gather the fruit before it becomes over-ripe. Possibly what is true of white wine may not be so of red wine, to which last-named kind attention is so widely directed in Europe. Here the proportion of white wine to red is very small, and it may be said that red is the rule, and white the exception.

"WHITE AND RED WINES.

"Our wine-makers in America understand very well the principles to be observed in the manufacture of white wine, and many of them, as regards care and nicety, are as good models as need be desired. But it can not be denied that the practice of selling the ripest and finest grapes for table use, and converting the unsalable into wine, prevails to a great extent among American vineyardists, and the result is the manufacture of much inferior wine. This has already injured the reputation of American wines, both at home and abroad. Of the much more complicated process of making red wine, however, American manufacturers are but little informed, for the reason that until recently they have had no grapes suitable for the purpose; but now that we have discovered those excellent varieties, the Norton and Ives seedlings—our estimate of the value of which has been very greatly raised by comparing wine from them with some of the highest grades of foreign productions—a few observations of methods of fermentation for red wine as practiced in France may be appropriate.

"In France, they will make either white or red wine from the same grape; but in America they have grapes whose pulp is so rich in coloring matter that they yield a very pretty tinted wine without any further treatment than what is given to make white wine, and a pure white wine can not be made from them; of this kind is the Norton seedling. Yet not for beauty alone do they put them through the process of fermentation on the skin, but because that process imparts qualities which, as affecting the palate, stimulation, digestion, etc., are quite different from what the other process imparts; many persons find red wine essential to their health, who can not use white wine, and *vice versa*."

[TO BE CONTINUED.]

LANDSCAPE OR HOME ADORNMENT.

BY F. R. ELLIOTT.

DIPPING into my portfolio a few days since, and looking over sketches of plans that I had made for various gardens, it occurred to me that perhaps some of these skeleton plans might be of use in communicating ideas for working up some new place about to be created by a reader of the HORTICULTURIST, and therefore I have transcribed and here offer two of them. As the style of the house, architecturally, as well as the association of the neighboring lots, has much to do with the kind of trees to be planted, I have omitted any detail, because such detail would be of little or no avail. I will merely say that if the house is of a square character, with a flat roof, and standing on nearly level land, then the prevailing character of the trees should be of a round-headed habit; but if the house is of a pointed gothic, or with many broken yet harmonious lines, and its location on some elevated position, then spiral and pointed trees should be largely introduced, and especially near the house.

Fig. 69 was designed for a lot the elevation of which at the house is some six feet or more above the grade at the public street, and the house situated about two hundred and fifty feet back therefrom.

The owner of this desired as few paths and roads as could be, and meet the actual daily travel demand. Neither did he want provision for many flower-beds, as he only kept one man to care for horses, garden, and all work. The beds next the public road are designed to be planted with flowering shrubs, in order to break a little the lawn from open exposure. So the bed on the right of entrance footpath is to be planted with shrubs, and also that where the carriage-road comes near the boundary to the left. The beds near the house in front are filled with low trailing evergreens, as Daphne cneorum, Juniperis squamata, repens, etc., while the bed on the left of the footpath is planted with hardy perpetual roses and tree peonias, keeping the flower-garden proper up near the house and immediately in view of the

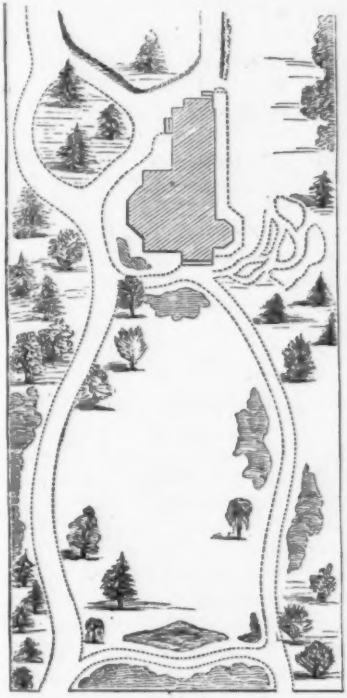

FIG. 69.

drawing-room bay window. As most of the landing is at the rear hall door, the turn-way is thrown in there, and a hedge borders the road on one side, separating it from the fruit or vegetable garden, barn, etc., beyond.

Fig. 70 is a design made years since for a lot where the front next the street was level, but back where the house was to

stand was high ground; and while it was desirable to have a lawn, etc., in front, yet the best view was in the rear. The plan of the house, therefore, was made for a terrace platform, and the roadways were cut down to a level with the front lawn,

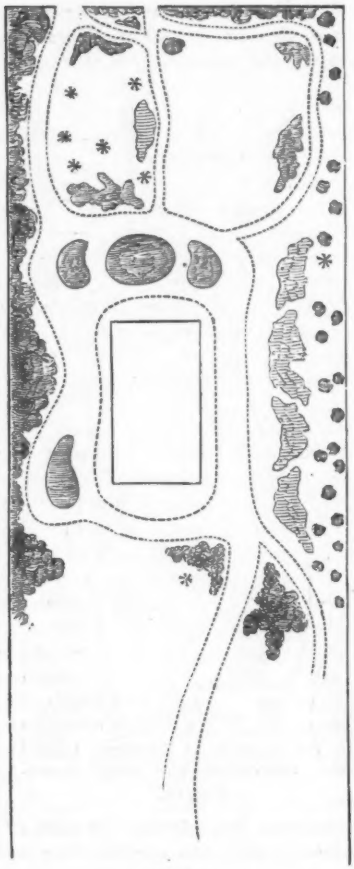

Fig. 70.

so that, standing thereon, a distant view could be had of the prospect in rear over the road and turf border at the left of the house. Where the flower-beds are arranged is a terrace, and back of that the ground again rises to its natural form, and is planted with ornamental trees and shrubs. The ** are the positions of old oaks that were growing in the ground, and too good to be destroyed. The right of the carriage-way is hedged and massed with hemlocks, while the beds in the main front of the house are planted with dwarf evergreens, and a hemlock hedge along the front or street line shuts the grounds from the public gaze, except as they obtain glimpses at the gateways. The rear of these grounds contains an ornamental green-house or conservatory, propagating-houses, pond, rocky cliffs, shaded walks, etc., making it really the most beautiful portion. The ground level, between the footpath and carriage-way from the street leading to the house, is somewhat higher than that of the lawn proper at the left, and although the path does not show it on paper, yet in reality it skirts a low bank.

Seedling Tree Peonies.—One of our Cleveland correspondents writes us that he has lately been through the rows of seedling tree peonies raised by Prof. Kirtland, of which we made notice last year, and that very few have this year shown any blooms. The named varieties—Colonel Wilder, E. S. Rand, and Doctor J. S. Newberry have none of them bloomed; but among those that have, is one of a most delicate, clear rose color, the flower very full and round and promising to be extra fine. Another has the petals colored much like the old peonia Banksii, but the flower is full double with each petal most delicately fringed. These seedlings have not yet been propagated, and while the Professor may devote time to hybridizing and originating, it is not his forte to perpetuate. The first is a matter of scientific taste, the latter a matter of commercial business. Our correspondent therefore suggests that some good, careful propagator make arrangement for the perpetuation of these really valuable new tree peonies.

NEW HARDY SHRUBS, DECIDUOUS AND EVERGREEN.

FROM "RECORD OF HORTICULTURE," NO. II.

BY A. S. FULLER.

Æsculus Michauxi.—This is probably a variety of our native species, Æsculus Pavia, or red-flowering buckeye. The plant, however, is more dwarfish in habit than the species, and the spikes of flowers much larger. When worked on the common buckeye or horse-chestnut, it forms a beautiful shrub or small tree, producing its large spikes of flowers in great abundance. We are indebted to Mr. Wm. S. Carpenter for a specimen plant imported by him from France.

Azalea. — The catalogues of European nurserymen contain long lists of new varieties of this beautiful shrub. The tender Chinese azaleas are far better known in this country than the hardy species. This is to be regretted, inasmuch as the hardy sorts may be grown by every one, and not be confined to those whose circumstances allow them to build costly green-houses for the purpose of growing tender exotics. We shall not attempt the naming of the best foreign varieties, but merely call the attention of our readers to this most beautiful class of shrubs. Even our own country furnishes a great variety, and by a little care in the selection, a splendid collection may be obtained from our woods and fields. We have found varieties of every shade of color, from the purest white to the darkest purple, and we have experienced no difficulty in making the plants live when removed from their localities in the open fields to the garden. Those who are seeking for choice ornamental shrubs should not overlook the native azaleas.

Arbor vitæ (Tom Thumb).—This new variety of arbor vitæ, sent out by Messrs. Ellwanger & Barry, is really a valuable acquisition. It forms a dense mass of fine, delicate foliage, not surpassed by any other hardy variety. It also retains its color well through the winter, not turning a sickly yellow, as many others do, thereby detracting much from their beauty as evergreens. The Tom Thumb will certainly become one of the most popular varieties of the dwarf arbor vitæs.

Arbor vitæ (Golden Tipped).—A variety of the common native species (*Thuja occidentalis*). It is a strong and vigorous grower, and apparently as hardy as its parent. The foliage is a rich golden yellow, there being scarcely any green leaves, except in the center of the plant. It is quite distinct from the common Variegated American or Chinese Golden arbor vitæ. It is the only variety which we have seen that is really deserving the name of Golden. Where or by whom it originated is unknown to us, our plant being received a few years since from a friend, who said that it was supposed to have originated in a garden in New Rochelle, N. Y.

Cotoneaster Fontanesii. — A handsome shrub, with oval leaves and numerous small white flowers, which are succeeded by spherical-shaped fruit of a coral-red color (*Revue Horticole*, 1867). The cotoneasters are very pretty shrubs, with small but numerous flowers. A number of the species are evergreen in the Northern States, while the deciduous varieties retain their leaves until quite late in the autumn. Most of the species and varieties are readily propagated by ripe wood cuttings, taken off in the fall, and preserved in sand or moss during the winter.

Deutzia crenata-pleno.—We named this shrub in our list of choice varieties in the first volume of the RECORD, and we again call attention to it, for it is worthy of a special notice. The flowers are quite dou-

ble, pure white within and a deep pink without; the strong contrast between the two colors gives the flower spikes a very unique and pretty appearance. It forms a shrub from four to six feet, of a dense, compact habit. The plants are now offered at a very low price, and no one should fail to procure this really very desirable shrub.

Hydrangea Deutziafolia.—This new hydrangea bloomed in several gardens in this country the past year. The flower spikes are of an immense size, white at first, changing to a dull purple or pink. Like all of the hydrangeas, it is a coarse-looking plant when in bloom, and only suitable for the open border. It is apparently quite hardy, a merit which will make it quite acceptable to those who have room for a great variety of shrubs.

Hydrangea paniculata grandiflora.—Another new half-hardy shrub, with elliptic leaves and large, branched, pyramidal panicles of white flowers.—*Flores des Serres.*

Hydrangea Japonica macrosepala.—A variety somewhat resembling the *rosalba* of Van Houtte, but having the segments of the sterile flowers one and one-third inch broad.—*Gartenflora.*

Rhododendrons.—We have several native species of the rhododendron, all of which are beautiful shrubs, and well worthy of cultivation. They were, long ago, sent to Europe, where, through the skill of the gardeners of the Old World, hundreds of new varieties have been produced, many of which far excel the original species. There are also many species natives of the Eastern Hemisphere, and new ones are being constantly discovered. Hybrids in great number have also been produced, not only between the different foreign species, but those of our own country, until it is quite certain that no genus of evergreen shrubs can at all compare with the rhododendron for handsome foliage and gorgeous flowers. Many of the foreign varieties and species are not hardy in the Northern States, but there is a sufficient number to satisfy the most ardent admirer of this class of plants. It requires experience with each kind to determine its character, therefore one must import many to find a few that are suited to the climate; and the high price at which all new sorts are sold, prevents the majority of our nurserymen from testing them. There are, however, a few of our larger establishments that have expended thousands of dollars in testing the various species and varieties of rhododendrons; and they now offer to the public the benefit of their labors in lists of sorts which have proved to be perfectly hardy and reliable. We would advise those who want rhododendrons—and who does not?—to examine the catalogues of these nurserymen. There are so few nurserymen who make a specialty of this class of plants, that we shall take the liberty of naming two firms whose stock we have lately examined, and think it w..rthy of a special notice. We refer to Parsons & Co., Flushing, N. Y., and Hovey & Co., Boston.

Spiræa callosa alba.—This is quite a distinct variety of the old spiræa callosa. The flowers are pure white, and the plant is of a very dwarf habit. It blooms quite freely, and is altogether a desirable hardy shrub.

Weigela nivea.—This splendid weigela was introduced into Europe several years ago from Japan, but it is comparatively new in this country. The plant is similar in habit to the well-known weigela rosea. The leaves are large and conspicuously veined, and of a light green color; flowers, pure white, and produced in great abundance. A beautiful shrub, and worthy of a place among the many fine varieties of this species.

Weigela Middendorffiana, purpurea.—A new purple-flowering variety of weigela Middendorffiana; a robust, hardy shrub, with handsome dark-green leaves and large panicles of flowers, which are a purplish red, shading to black at the base of the petals.—*Floral World*, March, 1867.

INGRAM'S SEEDLING APPLE.

THE *Journal of Agriculture*, St. Louis, recently published a drawing and description of an apple under the above name, since which we have received samples of the fruit, forwarded us by the courtesy of D. S. Holman, Esq., secretary of the Greene County (Mo.) Horticultural Society. Mr. Holman writes us that it was grown from a seed of Rawle's Janet, by Mr. Martin Ingram, and that the tree is productive and the fruit keeping until July. We would suggest that the word *seedling* be dropped from the name, and that the apple be called simply *Ingram*. Fruit, medium or

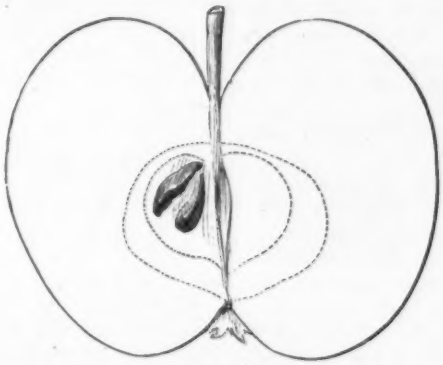

FIG. 71.—*Ingram's Seedling Apple.*

below, roundish oblate; color, a rich orange-yellow ground mostly overspread and with broken stripes of rich, warm red, gray russet dots, and slight marblings, with suffused surroundings; stem, medium length, slender; cavity, broad, open, pretty deep, often with a moldy, almost downy, russet appearance; calyx, small, open, with recurved segments; basin, open, medium depth, sometimes slightly furrowed; flesh, yellowish white, moderately juicy, rich, crisp breaking, mild sub-acid, almost sweet; core, rather large for the size of the apple, with large capsules well filled with seeds, which are full and plump, and very dark brown. Received and eaten May 18th, 1868.

MULCHING.—This—July—is the month to apply mulch, and we have repeatedly written that new-mown grass is one of the best materials for the purpose. It keeps in place well, has no weed seeds, and is not unsightly. Stir up the ground well with the spading fork or hook hoe first, then apply the mulch around the tree fully four feet in diameter for newly planted small trees, and about four inches thick. Be prepared to remove the mulch again as soon as the fall rains and cool nights commence, to be again replaced as soon as the ground is firmly frozen for winter.

ST. MICHAEL ARCHANGE PEAR.

SYNONYMS—Dusnar, Plombgastel, Plumbgastel, Plougastel.

Fruit, above medium to large in size, ovate obtuse pyriform; color, greenish yellow, with considerable brownish red in the sun and many dull russet specks; stem, stout, often inserted with a lip; calyx, medium, closed; basin, deep, regular, furrowed, or with compressed ribs; flesh, white, coarse-grained, especially near

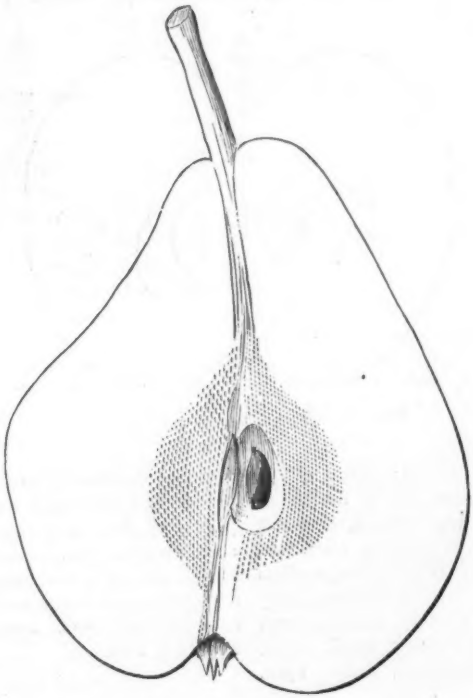

FIG. 72.—*St. Michael Archange Pear.*

the core, melting, sweet, juicy, rich aromatic; core, small; seeds, dark brown. Season, September and October.

The St. Michael Archange is a variety of the pear long introduced, and yet comparatively but little known. Wherever it is grown, it is found to steadily gain in favor because of the vigorous, upright form of the tree, its relative hardiness, and uniform good quality of its fruit. It is also a productive bearer, and grows well on the quince.

GARDEN ADORNMENTS—DESIGNS FOR COVERED SEATS.

BY F. S. COPLEY, ARTIST, TOMPKINSVILLE, STATEN ISLAND.

Of all rural adornments, the covered seat is one of the first things that should command our attention in laying out a garden; if it be but half an acre, it would not be out of place; only let its design and situation be chosen with judgment so as to harmonize with its surroundings, then it will add to the mere beauty of the place, if we say nothing of the health, comfort, and pleasure it will afford our family and friends to quietly enjoy the pure air, a fine view, or a book.

The following designs will be found particularly interesting, from their novelty, simplicity, and economy of construction; and may be built by any one with a little ingenuity, from the trunks, branches, and roots of trees; only being particular that the wood is cut at a time of year when the bark will stay on. One of the prettiest and most novel of these is the Arbor Seat, and one of the cheapest to build, as it takes but one post, and has a trellis roof,

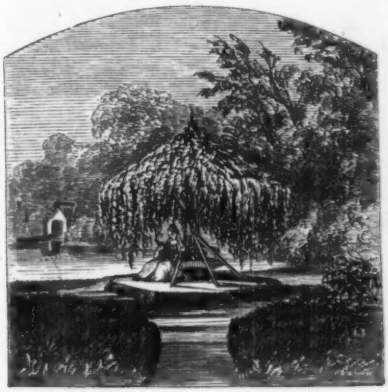

Fig. 73.—*Arbor Seat.*

and may be built lighter and rougher than any other, with better effect, being covered with vines, which by judicious training could be made in a few years self-supporting, forming a natural arbor. To carry this out in the most interesting way, select six of the best hardy grapevines, of different kinds and colors, and plant them (in prepared ground) six feet apart, and the same from the center post. (Lay down and train to center according to rule.) The center post is the only piece of wood that need cost anything, as all the rest is mere firewood and bean poles. Make this of red cedar, not less than nine inches thick and twelve feet long, set firmly in the ground three feet deep, in a bed of *lime concrete*, to prevent decay; set the braces the same, as decaying wood is injurious to the vine. The lower braces should be five inches thick, of oak or hickory; the upper ones three inches and the arms four inches, of cedar, with butts placed to center; the cross-pieces may be of wild vine, and the finial of roots. The seat should be made of half-rounded twigs, placed a little apart, round side up, to shed water and dust,

Fig. 74.—*Umbrella Seat.*

with angle pieces of root on braces, for arms; and a piece of root or wild vine bent round to form a back to the seat and a protection to the vines.

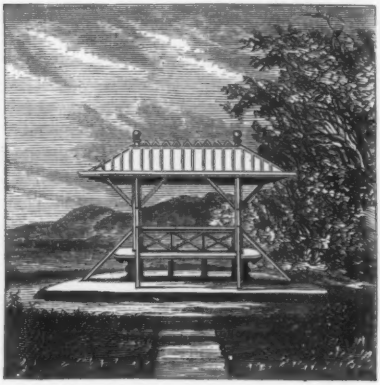

Fig. 75.

These should be trained up and round the post to the top, each sending out a branch along the upper brace (to take its place when removed); from the top, train each down its opposite arm, to the end, branching off at pleasure, and interlacing so as to be self-supporting when the frame decays. The floor should be raised a foot above the level, and the roots of the vines protected by a grating. When fruit is not an object, other hardy flowering vines may be used, such as the purple wistaria, red trumpet creeper, etc.

The Umbrella Seat is the same in size and plan, but differs in having a close roof; the design shown is of shingles, cut in patterns; but pretty rustic roofs may be made of bark, moss, thatch, or sticks.

The frame, however, should be stouter, and the post thicker for this design than any other; being but one, the strain would be greater, and it would appear less. This is a foot thick, with six half-round pieces nailed round to form a cluster and receive the angle braces; the foot of these with the post should be mortised into a sunk cross-frame, well coated with coal-tar and sand. The floor should be covered with small stones and gravel, mixed with hot coal-tar, using as little tar as possible.

The plan of the third design is a parallelogram of two squares, supported by two posts, each six inches square, and set the same in the ground. The roof is of boards with battened joints, set off with an ornamental ridge-board and balls. The seat is made of hard wood, rounding on top, and placed a little apart. For the sake of variety this was made a little more architectural, but the plan is equally well adapted for a rustic treatment as any.

The plan of the fourth design is an equilateral triangle. This has a shingle roof supported by three cedar posts, a lattice frieze, and a rustic seat. A few inches of the branches should be left on the post, to

Fig. 76.

facilitate the training of ornamental vines, as these would form its best and cheapest ornament.

Artificial Manure for Potatoes.—Superphosphate of lime, 4 cwt., sulphate of magnesia, 2 cwt. Mix and sow over surface before digging or plowing.

A FLAW IN THE PATENT LAWS.

BY I. W. ENGLAND.

THE patent laws secure to the inventor such a monopoly of his machine or device as will richly repay him for his skill and ingenuity; the copyright act gives to the author the control of the fruits of his thought and genius; but for the agriculturist, the florist, and the horticulturist, who gives to the world a new plant or a valuable fruit, there is no protection whatever, save that which his own prudence and foresight can provide; yet agriculture is defined to be the basis of our prosperity as a nation. Why the maker of a new mouse-trap should be able to reap thousands of dollars from his invention, under our patent laws, while the propagator of a new plant, the discoverer of a new fruit, the producer of an improved variety of grain which shall minister to the pleasure and delight of millions, and perhaps add untold wealth to the resources of nations, should not be equally deserving of reward, surpasses our comprehension. Nevertheless such is the fact. There is no protection to this profession anywhere. May not this oversight of the law-makers have something to do with the want of enterprise, the slowness of improvement, the comparative stagnation which exists in all branches of agriculture?

The patent laws are only about two hundred years old, and up to a comparatively recent period patentees were regarded with such distrust and suspicion as monopolists and extortioners, that in the courts a patent was seldom permitted to stand, if any ingenuity could detect a flaw. Yet, notwithstanding this illiberal policy, during this period what wonderful progress has been made in the arts and sciences under the stimulus of reward which even these imperfect and partial laws held out to the ingenuity of discoverers!

Compare the condition of the arts and sciences with agriculture, and what a vast difference do we perceive! It is true that we have made some progress in the cultivation of the soil; but do we not owe the great labor-saving implements which have superseded the spade, the mattock, the wooden plow, and the sickle to the beneficent influence of the patent laws? Something, too, we grant, has been discovered in regard to the chemical conditions of soils and their relative adaptability for plant-food. But how little has been done toward overcoming the obstacles which now attend the cultivation of our most valuable fruits, roots, and grains!

Have we not been too ready to set down to the account of nature the failures arising from our own ignorance? Does any one suppose that with an adequate incentive a remedy would not have long since been discovered for the ravages of rust, smut, mildew, and insects in the grain-growing regions; that a more definite knowledge would not have been attained of the causes which are leading to the destruction of our apple, pear, plum, and cherry plantations; our vineyards; the failure of the potato crop, and the means of their prevention? Undoubtedly; yet what is everybody's business is nobody's business. We see rot and mildew, mold and rust, decay and destruction yearly increasing where once was healthful plenty, and we stolidly resign ourselves to the reflection, that as Nature no longer smiles upon our efforts, it is therefore vain to fly in the face of Providence. So, instead of casting about for a cure of the evil, we cease to cultivate crops which have proved

so precarious and unprofitable. Hence our older States have almost wholly abandoned the growing of wheat; hence thousands of acres of vineyards have been uprooted; hence the stone fruits have almost totally gone out of cultivation in vast sections; hence the orchards are going to decay, because their uncertain crops are so small and worm-eaten as to become worthless; hence the cultivation of cotton is becoming hazardous and often ruinous to the planter. The same is true of tobacco, potatoes, and turnips; even the humble currant is infested with a crawling spoliator that consumes the crop.

Why is all this? Clearly, in our judgment, because while politicians and placemen have been ever ready to extol the dignity and the nobility of the tiller of the soil, they have left him to plod along his weary way without any special stimulus to improve the processes and products of his calling. It is all very well to say in public orations, that he who makes two blades of grass grow where but one grew before is a benefactor to his race; but what does it amount to? Suppose that some intelligent and thoughtful man devotes the best period of his life to experiments, and after years of labor and expense discovers a remedy for the diseases and disabilities now affecting the wheat crop in large sections of the country, or originates some variety of this grain that is proof against them—where is his reward? Here is a case in point: The Rev. Mr. Goodrich devoted eleven years of his life, and expended large sums of money, in producing certain new varieties of the potato, from seed (not tubers) imported by him from Peru, the home of *tuberosum solanum*.

That, surely, was a laudable and philanthropic endeavor—a service to mankind worthy at least of national if not of universal countenance and assistance. When we reflect how largely the product of this plant enters into the comfort, the health, and the sustenance of the community; how its failure has involved, and continues to involve, thousands and tens of thousands in heavy losses; how it has repeatedly impoverished a whole people and brought dread famine to the doors of millions, one would suppose that the originator of a variety of this esculent that should be not only proof against rot, but immensely more productive than the kinds previously known, would be voted a public benefactor, and enriched out of the national treasury. Not so, however. That worthy minister of the Gospel, who literally went about all the earth doing good, derived just one poor hundred dollars from the sale of his tubers, and four hundred dollars from the gratuities of agricultural societies. Like most great benefactors, he died poor, bequeathing to his wife and family the sole heritage of a good name.

Why was this? Millions of dollars have been realized by the propagation of *his* potatoes; why did not he come in for some share of this rich reward? Simply because, like the honest, unselfish man he was, he proved the value of his tubers by disseminating them among societies and individuals throughout the country, either gratuitously or at a nominal price, to determine whether they were as valuable generally as they had proved with him. They proved invaluable, and those to whom they were sent speedily propagated an immense supply, which they sold at fabulous prices for their own personal advantage. Now, had we an agricultural department worthy of the great interests which it professes to conserve, this injustice would not have happened. Mr. Goodrich might have been protected in his discovery, and the profits to which he was so justly entitled would have gone into his own exhausted purse, to reimburse him for the years of patient research and heavy outlay which he had incurred for the benefit of his fellow-man.

Now we desire to suggest, and it seems to us that the accession of a new chief to the agricultural bureau at Washington is a good opportunity to broach the subject,

that what Congress has done for the literary man and the mechanic, that shall it do for the farmer, the florist, the horticulturist. Let there be, in connection with the agricultural bureau, an office of record, where the name, character, quality, description, etc., of new varieties of fruit and grain, originating in this country, shall be entered, and secured to the originator. Let specimens be sent to trustworthy correspondents of the bureau in various sections of the country, so that its value for general cultivation may be determined. Let the result thus arrived at be publicly announced under authority of the bureau, and the right to vend the article be vested in the originator and his licensees for a term of years. Something of this kind would wonderfully stimulate to continued improvement in the production of choice varieties of plants and grains to the great advantage and profit of the country. While it would secure to the originator the just reward of his skill and labor, it would protect the public from a thousand impositions now put upon them by the venders of new varieties of untried and doubtful value. As this business is now conducted, we have no hesitation in asserting that many thousands of dollars are annually thrown away in the purchase and planting of fruits, for example, which, however valuable they may have proved in their original locality, are totally unprofitable and useless for cultivation in other sections under an altered condition of soil and climate.

The case of Mr. Goodrich is by no means a solitary one. We know of many similar instances where other deserving horticulturists and agriculturists, who have devoted their best years to the public good, have had only their labor for their pains, other persons, to whom they have sent specimens of their plants, in various sections, to test their value, having stepped in to rob them of their reward. Every year the nurserymen of the country are mulcted in large sums of money for the purchase of new and professedly valuable plants, which too often prove of little or no value. These being sent out at extortionate prices, for general cultivation, and failing to answer the expectations excited by the glowing descriptions published of their merits, tend to discourage cultivators and bring the profession of Horticulture into disrepute. Were some such system adopted as we have suggested, however, the honest experimenter would be protected in the product of his labor, the prices of new plants would be set at a more reasonable figure, so as to be within the reach of all, because the originator would, instead of, as now, being compelled to realize his profits out of his first season's sales, be secured in their enjoyment for a term of years. We presume that a royalty of one cent per bushel upon the potatoes grown from Goodrich's seedlings for seven years would have made him and his family independent. Who shall say that such a reward was not richly merited? Who would feel that such a price for the enjoyment of the fruits of his labors was a burden?

We know it may be urged that such a provision as this has never yet been incorporated into the patent laws of any nation; but of its necessity, its justice, there can be no question. As the United States, by its greater liberality to inventors, has stimulated the arts and sciences, and added to the industrial wealth and resources of our people more than any other government in the world, let it go one step farther, and, by judicious legislation, stimulate the husbandman to take rank among the highest order of productive agents, and elevate and dignify that profession which, however much lauded by poets and extolled by politicians as an ennobling one, has heretofore been of the earth, quite too earthy.

THE CURRANT WORM.

It is impossible for me at this time to give you a detailed account of my fight with this new and most formidable enemy of the horticulturist; but according to promise will try to put some of your readers on the alert for this terrible army which comes noiselessly and without banners, and ere we know it the foliage is gone.

The curculio has nearly discouraged us in the cultivation of plums, apricots, nectarines, cherries, and some varieties of pears and peaches, having proven to be entirely too smart for us, notwithstanding the boasted patents and nostrums for his destruction. It is barely possible that some good may grow out of the loss of the above-named fruits. It is stated that all things are permitted for some wise purpose, but one could hardly imagine any good thing resulting from the destruction of this antibilious and corrective fruit, the currant.

These worms undoubtedly are of very recent origin. We first heard of them but a few years ago; we must therefore conclude that creation is not ended. If this is true, and there is no good resulting from the destruction of this variety of fruit, it would suggest that the wise Creator has had nothing to do with it. About the middle of May they begin to appear on the lower leaves near the ground, and what afterward proves to be many hundreds may be found on a single leaf. They travel slowly until they attain considerable size, which gives ample time to destroy them before they have done much damage. By the 1st of June small black skins, with the worm's head attached, may be seen on the ends of the branches, and in a very few days no worms are to be seen. I have seen hundreds of worms on the top of a bush in the evening, and in the morning each one had left behind it its skin, and disappeared. Whether in one night the larva changes into a fly, unlike other insects, or whether it goes through the regular transforming process of a chrysalis' life in a cocoon, in the earth beneath the bush, I have not ascertained, but intend to remove a bush, sift the soil, and learn the facts, if possible. I placed three sizes of the worms, from one third to fully grown, in a glass vessel, and put in with them some currant leaves; each of the sizes immediately concealed themselves at the bottom of the glass under a cocoon. This leads me to think that they enter the earth as above conjectured; but why they should leave their old suits behind them on the ends of the branches seems to be a mystery. It is about two weeks since the larvæ were placed in the vessel, and it is now swarming with beautiful yellow flies, in size and shape somewhat similar to the house-fly, a little more slender, with large abdomen, and prepared to deposit an innumerable number of eggs, which they are now fastening upon leaves put in the glass for this purpose. We may therefore suppose that the eggs of the new installment are already upon the foliage, and I am watching daily for their reappearance, which at the farthest will not be longer than a week, as they have been gone from the bushes two weeks; thus they appear and disappear three times during the season, and each time they come in greater numbers.

The bushes should not be allowed to touch each other; if they do, the larvæ will continue to eat and grow until they get to be an inch long. They do not in any case leave one bush and creep on the ground to another, but always leave when they reach the top, not being particular about their size or age, if the branches of another bush do not intermingle. I have had many bushes uninjured, with others

standing on either side entirely defoliated, when they did not touch each other. I find white hellebore a perfect remedy, and the De La Vergne sulphur bellows the most convenient instrument we have used. All sprouts and rubbish should be cleared away, that the worms may be readily seen. A slight puff with the bellows will kill them in twenty minutes. I think that this bellows should be in the hands of every person owning a garden, not only for applying the hellebore to the currant and gooseberry bushes, but for the application of sulphur and Cayenne pepper mixed to destroy the rose bugs, thrip, and other insects, on grapes, roses, etc. I use it weekly, with success, on valuable varieties.

The druggists who retail hellebore usually charge more than double the first cost. One of them, of my acquaintance, paid 30 cents per pound, and remarked that he ought to retail it at 75 cents. Last season I paid 50 cents at retail. I bought 100 pounds this year at 35 cents, and was offered it by other parties at 30 cents, and it is quite likely that these wholesale dealers did not pay more than 15 or 20 cents per pound; and unless this article is so regulated that the consumer can get it at a fair valuation, it can not be used to any extent by horticulturists. As to its being poisonous, I can only say that I have inhaled it for two hours at a time, this season and last, and so have other members of my family. It is very unpleasant to the olfactory organs, and causes sneezing. This may be avoided by keeping to the windward side. The bellows should not be used when the bushes are wet, as the wires soon fill with the dampened powder.

A. J. Caywood.

Poughkeepsie, N. Y.

EXTRACTS FROM FOREIGN JOURNALS.

Dipladenia Amoena.—This valuable acquisition among stove plants has been raised from seed of D. amabalis by Mr. Tuke, of Bramley, near Leeds. The flowers are three inches in diameter, and the foliage a more intense green than the parent. Mr. T., who is a successful grower of this fine genus, uses as a compost rough fibrous peat, sand, and a few rough bones.

Gloxinias — Propagating from Leaves.—As soon as the young leaves have attained their full size, remove them with half inch of leaf stock, and insert around the edge of a pot in a mixture of loam, leaf mold, and sand, with a layer of sand on top to root them in. When rooted, remove into small pots, using a compost consisting of two parts loam, one part leaf mold and thoroughly decayed cow-dung, with one half part clear sand.—*Gardener's Magazine*, p. 146.

Viola Cornuta. — The color of this plant is quite indispensable in large mixed masses, and its combinations with most of the silver-edged pelargoniums are truly charming. The mixture of viola cornuta with mangles, pelargonium, and sensation chrysanthemum was universally admired. As a rule, all violas are gross feeders, and should be planted on good ground, plenty of rotten manure being used.

Setting the Fruit of Vines. — Mr. Fowler recommends the collection of pollen, and dusting (fecundating) those varieties that do not set freely. He recommends a night temperature of 72° when the vines are in bloom. Contrary to the received opinion and ordinary practice, he does not reduce the amount of moisture in the house while the plants are in bloom, unless there is a deficiency of sunlight. He likewise advocates a rather high day tem-

perature and a small amount of air during the night until the fruit is set.

PANSIES. — To grow them successfully use fresh soil annually. Slight shading from sun is found to be beneficial. Watering should be avoided, unless absolutely necessary; and when required, to be done in the evening.

LATE GRAPES.—Mr. Harman gives his experience with a house 102 feet in length for growing late grapes. He states that in December and January the Alicanthe surpassed all others for form and appearance; but that the race for late keeping seems to be between Lady Downes and Barbarossa [Gros Guillaume]. Last year he cut the last of Lady Downes on the 18th of March.

VARIEGATED ZONAL PELARGONIUMS AS SPECIMENS.—Mr. Greive, the experienced cultivator of these charming plants, recommends the selection of the best of autumn struck cuttings. In February shift into pots one size larger, keep near the glass and in a temperature not lower than 45° as a minimum. Turn the plants frequently, so as to expose all sides to the sun. Early in May shift into six or eight inch pots, using a compost of turfy loam enriched with a small amount of decayed manure. During the summer months, they succeed best in a pit or ordinary frame fully exposed to the sun. Any leading shoots may be topped. In June or July the plants will become beautiful objects for decorative purposes.

PYRETHRUM, GOLDEN FEATHER. — The useful bedding pyrethrum, golden feather, comes true from seed, thus dispensing with the more tedious process of propagation by cuttings.

FUCHSIA GOLDEN QUEEN, in the coloring of its leaves, resembles that favorite, Mrs. Pollock Geranium; it is a good grower, but blooms sparingly. Golden Fleece is strictly a bedding variety; it stands all kinds of weather during the summer, and forms a beautiful miniature golden hedge from six to ten inches high.

GRAFTING PEONIES.—The tree varieties are difficult to increase by division; but can be easily propagated by grafting. From the middle of July to the middle of September obtain strong roots of herbaceous varieties, and a graft with one or more buds inserted upon the side of the root. The grafted roots must be put under bell-glasses, or in close frames with a northern aspect; the grafts soon become united, and produce roots for themselves. — *Floral World*, p. 117.

LADY DOWNES' GRAPES.—A correspondent referring to the difficulty of inducing this grape to break its buds regularly, was induced to remove the outer covering of the buds with the happiest results.—*Cottage Gardener*, p. 323.

SELECT VARIEGATED ZONAL GERANIUMS, excluding the most expensive: *Golden*—Mrs. Pollock, Sunset, Sophia Cusack, Lucy Grieve, Lady Cullum, and Mrs. Benyon. *Silver*—Italia Unita, Argus, Beauty of Guestwick, Imperatrice Eugenie, Burning Bush, Silver Star, Bronze, Beauty of Oulton, Bronzed Queen, Mrs. Longfield, Canary Bird, Luna, Circlet.—*Ibid.*, p. 331.

RAISING SEEDLING FERNS.—Take pots or pans and fill them half full of rough pieces of crocks; then take fibrous peat, break it roughly, and thoroughly incorporate with an equal proportion of sphagnum moss. Fill the pans or pots about two inches above the level of the rim and make it firm. When the compost is properly moistened, take the fronds of the varieties desired and shake them over the compost, and draw the hand up the underneath side of the fronds to dislodge the spores. Cover in the bell-glass and stand the pots or pans in water in a shady place. —*Ibid.*, p. 148.

COMPOST FOR FERNS.—For finer exotic varieties use a mixture of equal parts of sandy peat, leaf mold, silky loam, and cocoa-nut fiber, with a little silver sand. For large-growing kinds as well as British varieties, a mixture of half fibrous loam,

and the other half peat, leaf mold, cocoanut fiber, sand, and burnt clay.—*Ibid.*, p. 156.

HYACINTHS.—After blooming, these are generally thrown away. We can grow them in this country as well as the Dutch; and the way to keep up a stock is to have three beds, and let them follow one after the other: No. 1, for offsets and weak bulbs; No. 2, for bulbs that have flowered, and are removed from glasses and pots to finish growth and ripen; No. 3, for bulbs to use next season for display. They should never be allowed to bloom in these preparatory beds.—*Ibid.*, p. 174.

PAMPAS GRASS.—To grow it well it requires a deep moist loam, heavily enriched with rotten manure and leaf mold; and during its season of vigorous growth—from the end of May to the end of September—it should be frequently supplied with weak liquid manure. Its natural habitat is beside the rapid and frequently swollen streams of South America.—*Ibid.*, p. 174.

ROOT CUTTINGS.—This method of propagation, though not new, is but little known and but little practiced. Neuman propagated Dais cotinifolia, Pawlonia imperialis, Maclura aurantiaca, Cydonia Japonica, Halesia diptera, and Araucaria Cunninghami. We have seen multiplied in the same way pelargoniums, peonies (tree and herbaceous) roses, mulberries, grevilleas, etc. M. Josst raised by the same mode Sarracenia rubra, purpurea, and flava by means of cuttings of the rhizomas of these species. Mr. Bain, of Dublin, increased by root cuttings Ouvirandra fenestralis, Sarracenia species, Drosera binata, Dionæa muscipula, and Cephalotus follicularis.—*L'Illustration Horticole.*

VINE GRAFTING.—Cut back the stock at winter pruning to point where it is to be grafted, leaving an eye opposite to where the cion is to be inserted. When this bud has grown six inches, pinch it back to three leaves and whip graft on opposite side. Bind with matting and cover with clay, and then with moss over the clay. Keep the moss moist with water of same temperature as the air of the house. When the buds on the cion have commenced growing, remove one leaf from the stock. When the cion is fairly in leaf, remove the shoot from the stock.

VALUE OF ORCHIDS.—At a recent public sale at Liverpool a specimen of Dendrobium Falconeri sold for sixty-seven guineas.

GLADIOLUS CULTURE.—When the gladiolus is grown in rich stimulating soils, it will produce the largest and finest spikes, but at the expense of health in the bulbs. I find the varieties grown in poor sandy peaty soil have the healthiest bulbs. After flowering, and as soon as the leaves begin to change color in October, the bulbs are taken up and spread in a dry airy room, secure from frost. I find the best way to raise seedlings is to sow the seed in April on a south border, the soil being made very light with plenty of sand and leaf mold. If the seed is sown in pans and boxes, the roots become cramped, and the bulbs never grow so fast as in the open air.—*Journal of Horticulture*, p. 39.

YUCCA PROPAGATION.—In removing old plants of yuccas, an ample supply of young plants can be obtained by taking roots of the size of a finger and cutting them in lengths of three or four inches. If slightly covered by soil, young plants will be produced without trouble.—*Ibid.*, p. 44.

POTATO PRODUCE.—The gross average return per acre of numerous varieties was from—

	Tons.	*Cwts.*	*Qrs.*	*Lbs.*
1 oz. sets	10	19	3	17
2 "	13	15	2	15
4 "	13	9	0	2
6 "	16	13	1	16
8 "	18	11	0	16

—*Ibid.*, p. 47.

"THE ENEMY."

In the April number of the Horticulturist for 1866 is an earnest and able article under this caption. Many such articles, doubtless, appear from time to time. Some "watchman on the walls" gives the alarm, and earnestly and truthfully warns all of the great and present danger. But the masses do not heed. They only see their own individual losses, and never think of what the grand total loss amounts to. The great complaint is, a want of unity of action among those who are, or should be, interested in fighting this insect enemy. I will not dwell on this point, but will endeavor to show some other reasons why this enemy is not conquered.

In the first place, the masses know very little of the nature and habits of this insidious and destructive enemy; and this "little knowledge," always a "dangerous thing," in this case only discourages them. "Where is the use," say they, "in destroying hundreds a day even, when we are told they increase by hundreds of thousands?" And truly it does seem rather a small business to send a busy farmer "bug hunting" among his trees and plants when his farm crops demand all his time. He will tell you that he is "losing deal" crushing one worm at a time, when the chances are that one moth will produce more than he can destroy, in this way, in a whole season.

I will endeavor to give a few ideas showing the *nature* of this enemy, *when* to fight him, and *how* to fight him successfully. However interesting to an entomologist the study of the natural history in full of each of the many forms of insect life, only a few general facts are necessary to those who only wish to rid themselves of what to them are truly "enemies," and such as they are *not* commanded to "love."

When the warm days of spring are sufficiently advanced, the hosts of this insect enemy come forth from their hidden retreats (from the earth, old farm buildings, hay-stacks, and forks and limbs of trees, where they have hibernated in the chrysalis state) as perfect *winged* insects. No matter what the size, from the diminutive midge to the great drowsily humming beetle, the rule is, they are all *winged*. In this stage of their existence they are not directly injurious to vegetation. The male seeks the female, and having passed a short honeymoon among the flowers containing their food, he dies, having accomplished all that he had lived through the long winter to perform, that is, the impregnation of the female. She, in a few busy days, deposits her thousands of minute eggs in places at once the most secure and convenient to the food of her future offspring, and having finished her work, dies. These eggs are soon hatched out by the warmth of the atmosphere, and small worms appear, which at once voraciously attack the parts of plants which constitute their natural food. As they increase in size, and their local supply of food becomes exhausted, they, by various means, transport themselves to other places, sometimes to distant fields, to seek new supplies, and continue to be very destructive until this stage of growth is finished, when, by another remarkable change, they pass through the chrysalis state, and emerge perfect winged insects again. Thus two or more broods come into existence in one season, and the number of offspring from one pair in one season is immense. Those who go into the chrysalis state during warm weather require but a short time to emerge to continue the work of destruction through their teeming progeny. Cold weather never comes soon enough to cut off an entire race, though more are destroyed in this way in some seasons than others, accounting for their appearance in greater or less numbers.

From the above well-known facts it is evident that it is in the form of slugs, worms, and lice that insects injure vegetation, and hence the general error of attempting to destroy them in this stage, and, because of the failure of such attempts, of despairing of ever accomplishishing any satisfactory results. I believe that farmers are more ready to give up trying, under such discouragements, than any other class of men, owing perhaps to the wide latitude of failure or success which nature allows them. Let them take a lesson from the grape-growers, who are still fighting their phantom enemy, mildew, with unabated zeal, though constantly, up to this time, losing ground. "An ounce of prevention is worth a pound of cure." Let them take the enemy at a disadvantage: while enjoying the honeymoon, and reveling among the flowers with his spouse, spread snares for his feet. In other words, the only practical time to attempt the destruction of injurious insects is in the moth or perfect winged state. The reason "why?" is that by destroying one female moth, you destroy a thousand rapacious worms in embryo. But the question "how?" brings us to the third, last, and most important part of this most important subject.

"In times agone," when the Southern planter employed all his time and means in the production of the one staple, cotton, the insect enemies of the cotton plant committed such havoc as to lead the minds of the planters to search for some means to stay their devastating march. After the crop has passed the dangers of its infancy, and arrived at the time of flowering, when the vast fields appear a sea of luxuriant green, comes the dreaded "army worm," devouring every green leaf, leaving the fields bare, as though blighted by a hoar frost in midsummer. Scarcely have the plants recovered from this shock, and clothed their naked limbs again with tender leaves, when the "boll worm" comes in the track of his forerunner, and attacks the fruit of the plants, devouring the bolls themselves. Many expedients were resorted to to save a part of the crop at least. Some kindled fires at intervals over the fields on the appearance of the moths; but though many were burned, many more were attracted from neighboring fields where no lights were kindled. Plates containing molasses, placed the height of the plants on stakes at intervals over the fields, were found much better, though very expensive, as the rain washed away the molasses, and the sun dried it up.

The next step was a rude lantern with a tallow candle burning inside, and a tin plate or pan beneath, containing molasses, which was more efficacious, but more expensive, than the plates, adding cost of candle, etc., to loss of molasses; this was patented. An energetic and intelligent planter, Dr. J. M. Heard, of Monroe County, Miss., then set himself carefully and resolutely to work, and never ceased from his labors until he had perfected an invention known under the name of Heard's Moth Trap," which, with the careful study he has bestowed up it, leaves no room for improvement. A bait pan, containing molasses and water, flavored with the oil of annis, or some other essential oil, covered with a broad cover, to protect from sun and rain, the cover supported by an inverted triangular cone, the whole made of tin, and supported by a stake passing through the center of the pan, is placed among any trees or plants infected with insects, and you have planted the most effective battery in the world to destroy this kind of enemy. It is necessary to visit the traps frequently to remove the dead insects and replenish the bait pans. For this work the operator provides himself with a sufficient quantity of the prepared bait, and a tin bucket with a wire gauze strainer fixed inside. The insects are removed from the traps and thrown into the bucket, upon the strainer, when the molasses drains off into the bucket below, and is used again. The insects are thrown to

the poultry, and thus nothing is lost. The brightness of the tin attracts the moths at night as well as the odor of the bait. Flying toward it, they strike against the sides of the inverted cone, and are precipitated into the glutinous fluid below, where they die a luxurious death. There are two modifications of this trap—one for the bee moth, roaches, crickets, etc., the other the best and most simple fly-trap in the world.

F. W. V.

MERIDIAN, MISS.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and Publishing Departments, to F. W. WOODWARD, 37 Park Row, New York.

POULTRY.

WE have received the following letter, which we publish for the benefit of our readers, at least all of those who take an interest in the subject of which it treats. The writer has been long known to us as one of the most successful poultry breeders in this country—not for profit, but purely from love of the occupation. He proposes to give us, from time to time, articles in which the various breeds, their merits and faults, will be freely discussed, and in this he will avail himself of the experience of another poultry breeder of note.

T——, MASS., *May* 19, 1868.

F. W. WOODWARD, ESQ., PUBLISHER "HORTICULTURIST," NEW YORK—*Dear Sir:* Having received, through our mutual friend Mr. E——, of your city, an invitation from you to become a contributor to the *Poultry Department* of your interesting and widely circulated monthly magazine, I drop you this hasty note to say that, whenever the demands of an active business vocation may be so far relaxed as to permit me, I shall take great pleasure in contributing an occasional paper upon a subject in which I take a very lively interest myself, and in which almost every household in the land is more immediately or remotely interested. Why, sir, the poultry question seems like a rather insignificant matter from a mere casual glance at it; but when you critically survey it in its diversified ramifications it looms into an impressive significance, just as the *pin* does in the economy of the toilet and the demands of a refined civilization. Without *poultry* and *pins* what would the dear women do? Why, sir, I stand aghast at the consequences to the *cuisine* and to the drawing-room at the obliteration of these indispensables! Just think, for a moment, what a wonderful commotion would arise in your great city if an immediate embargo were laid upon the transportation of poultry and eggs into the metropolis! Why, the question of *Presidential impeachment* is a tame and insignificant matter in comparison thereto. Every household would rally in rebellion; popular meetings would be called, and a monster indignation meeting would fill the Central Park to denounce the cutting off of the omelets, the custards, the cakes, and the innumerable other dishes into which the indispensable egg enters, and to clamor for the restoration of the broilers, and the capons, and the *poulets*, which contribute so largely to the necessities of the invalid and to the gratification of the epicure.

There is a wide-spread demand for poultry, and that demand is all the while swelling and enlarging, and he who makes the largest contribution to it is a real benefactor—a benefactor who is far more worthy of the applause and patronage of men than the blatant demagogue who inflames the passions of party zealots that he may gratify a low and selfish ambition, or even the bedizened warrior whose guilty march to triumph and to power is not unfrequently over the forms of violated purity and innocence, and the prostrate remains of right and justice and liberty.

I take it for granted that you desire to have me give you the results of my own experience touching the *varieties* and *characteristics* of the several breeds of fowls with which I am most familiar, together with whatever facts relative to their *breeding*, *management*, *diseases*, etc., I may conceive to be of general interest to your readers.

The bare mention of the more prominent points to be elaborated opens up before the vision of the poultry fancier an almost boundless field. But when it is remembered that the space in your magazine which may be allotted to this subject is extremely limited, and besides, that the pressure of active daily business duties prescribe limits to the moments which I may give to the task, it will hardly be feared that any dissertation will grow into such voluminous proportions as to become burdensome.

As I can not enter analytically into my prescribed theme in this initiatory paper, it will not be amiss to premise that the question will be considered mainly from a *utilitarian* stand-point — the point from which, no doubt, the mass of your readers who take an interest in it would prefer to have the subject considered. Some men breed poultry for *pleasure*, while the mass of them breed for *profit*—just as some of your neighbors and friends, no doubt, of different tastes and views, cultivate their gardens and their fields. While the garden of one enchants the eye with the blushing and multiform beauty of a thousand flowers, and intoxicates the senses by the tide of incense which they pour upon the summer air, the field of the other spreads its smiling sheaves of plenty as a blessed ministry to the grosser needs of men. The *beautiful* and the *useful* blend together their charms and forces, and pay a grateful tribute to the poetry and prose of mortal life.

Experience is assumed to be the only sure and trustworthy guide in testing the merits or qualities of the different breeds of fowls. And, though there must, of necessity, be somewhat diverse results with the *same kinds* of fowls, because of the different management and care bestowed, yet the weight of the general and intelligent testimony assures a proper verdict in the end. There can be no assured and unfailing success in poultry growing without careful attention to the whole routine of duties demanded in the hennery. The generally accepted axiom, that "eternal vigilance is the price of liberty," carries an impressive lesson to the poultry breeder, whose experience will ultimately demonstrate, in that specialty, that constant watchfulness is the price of success. Some men seem to imagine that to secure a *good breed* of fowls will guarantee their success, irrespective of any agency on their part to keep them good by proper feeding, breeding, etc. Never was there a greater delusion. No inherent excellences in the entire scale of animated nature can bear up under the pressure of ignorance and neglect. Adam's great transgression has written the fearful word *decay* in such impressive characters upon all animated life, that we can only hope to bribe its swift consummation by paying the tribute of exacted toil and sweat. We can hardly win success without deserving it, and we shall not certainly deserve it, and ought not to expect it, without the employment of rational and well-directed efforts.

Very truly, etc., E. W.

Dwarf Magnolia Conspicua.—A few days since (June 8), visiting Prof. J. P. Kirtland, I saw in his grounds a seedling magnolia from the conspicua. In habit of growth it was about with purpurea, a little more upright, and with flowers about two thirds as large as conspicua, and the petals a pure clear white, but not opening until about a week or ten days later. It promises a valuable acquisition to be embraced in first-class shrubs. F. R. E.

Mr. Editor: As the young mathematician finds mistakes in his arithmetic, and detects the errors of Butler or Pinneo, so we beginners in horticulture discover inconsistencies in Downing and Fuller. They teach that if a tree is heavy laden with fruit this year, its vitality will be so taxed to perfect it that few or no fruit buds will be formed for the next. My neighbor, Richard Gosney, has a tree in his orchard which seemingly was not exhausted by excessive growth, yet stood year after year without fruiting. But three years ago, while Ezra Hicks was hauling a load of hay out of the orchard, one branch was badly injured. The next year that branch was literally full of apples, while the balance of the tree was barren as before.

Of course the hay should not have been in the orchard; but you need not speak of that, as I intend to scold Uncle Dick for it when next I see him. And the Ezra Hicks above spoken of is no kin to the Hick's Apple, but a good fellow for all that.

Well, I know several other examples that seem to conflict with theory, but lest I get picked up on them, like the boys that find mistakes in their lessons, I will not mention them now. You see, this is a new business to me, though when I was a boy my father often complained that my mania for tree setting made necessary a job of grubbing every year. But now I have a patch of hills of my own, and having a little leisure, intend to have my *fun out*. Said land is beautiful to look upon. The hills go up to the clouds most, and the hollows so deep that the sun never shines in them. It looks romantic—decidedly—unless a man feels concerned about his bread and butter; then it seems more formidable than picturesque.

When the timber is deadened, or cut off, the bushes come up as thick as the hairs on a dog's back. The soil is not deep enough, nor rich enough, to brag much about; but any land that can sprout hop-poles like this will grow peach-trees. So I set out three hundred budded trees last fall while the ground was in fine condition, and they are making a splendid growth. I also set nine hundred this spring—budded—most of which are living, but not doing half so well as those set in the fall. Had it not been for the excessive rains, no doubt many would have died.

I speak of them as being *budded*, from the fact that they are considered a very unsafe investment in this country, while seedlings average about three crops in five years. Budded trees are all full this year. I have an acre planted in seeds, and shall plant them as seedlings this fall, except a few to be budded with nectarines and almonds.

By the way, I read an article in an old number of the *Prairie Farmer* (about 1858) from some man near St. Louis, who said that almonds would grow there. So, three years ago, I procured two trees, one of which came near dying; but the other made a splendid growth, and is now as full of fruit as it can hold—as full as a peach-tree.

On this land, beside the bushes which come up so thickly in old deadenings, wild grapevines also spring forth, and make a perfect tangle. These vines, about every other year, are full of grapes; and people go miles to get them, and call them good. Can't say that I like them; but their presence and productiveness under difficulties led me to hope that better kinds might do well. Speaking of these wildlings reminds me of an anecdote told me to-day, showing that the taste of our people is not well educated in the matter of grapes. The gentle-

man relating it had a splendid lot of Delawares, and also some fine Concords, and took a basketful of each to market, but found it very difficult to dispose of the samples, even, at a very low rate. People admired them as something of a show; but what use to pay eight or ten cents a pound for them when the woods are full of wild ones for nothing? He finally came across a friend, a banker, I think, who concluded to take one basket, and was told that he might have his choice at the same price; and, after tasting carefully, expressed himself highly in favor of the Concords!

Having had symptoms of grape fever repeatedly, I read Husmann's book, and it took a deep set. Had a piece of old deadening grubbed out, and being too full of stumps, and rather steep to plow to advantage, I had holes dug with a spade, wide, but shallow, and having them partly filled, set the roots near the top, and shall have the spaces between spaded up. I do not give this mode with the expectation that future generations will adopt it, but that it may go on record. With reference to the final result: the wild vines are upon the very surface; and if they can grow ten or fifteen feet in a year, Concords ought to grow *some*.

I have planted eight hundred one-year-old vines in this manner, and they are making a fine start, scarcely one failing to grow. But I went out a few days ago to break off all the buds, except one or two, and found the whole earth covered with locusts; and as they were letting-in rather heavily on the young vines, I concluded to withdraw my services until I shall see what these things are going to leave. By-the-by, I feel interested about their proceedings, and will stop this epistle to go and see; but I don't want to sign my name to it, for there are some people who would think I had better be attending to my old business. The names significant of the horticultural profession are already assumed by different writers, except, perhaps, it is the word "Amateur" Horticulturist, which is certainly a very pretty name, but is awarded, by general consent, to the older and more eminent members of the profession. Come to think, *Immature* Horticulturist sounds nearly as well, and is so much more appropriate that I will adopt it as my *nom de plume*. There is no need of being over-particular. If a name *sounds* well, and is *appropriate, that ought to be sufficient.*

With the eagerness characteristic of new converts, I sign myself,

Fraternally yours,

IMMATURE HORTICULTURIST.

CENTRAL INDIANA, *May* 28, 1868.

A FINE VINE.—One of the most remarkable vines we have ever seen is now in full bearing in Kaye's Nursery at Finchley. It is not so large as either the Hampton Court or Cumberland Lodge vines—much smaller, in fact; but in point of size of bunch neither of these, nor any other vines we are acquainted with, approach it. The Cumberland Lodge vine is considerably finer than the Hampton Court, and bears about 2,000 bunches, looking meanwhile as if cribbed and confined for room, as the shoots reach the extremity of the great house, and are there cut off, just as we are obliged to do in small vineries; but one of the Finchley bunches is as large as three of those we have seen at Hampton Court and Cumberland Lodge. The fact is, the vine may be grown to a fabulous size if supplied with all the root room it can occupy, and a suitable soil, and with house-room, so that there is not so much of the remarkable about those two famous vines; but the Finchley vine, while extraordinary as regards size, is still more so, as we have said, for the size of its bunches.

The curious part of the matter is, that no unusual pains were spent upon the making of the border in which this fine vine grows. It is made on a hard clay bottom, a considerable quantity of brick rubbish being placed on that part, with a slope to a drain at the front of the border

which is about fifteen feet wide. It is not quite raised above the level of the surrounding ground, as most borders are with our great growers. The soil of the border is not that epicurean kind of loam recommended by most writers on the vine, but just the top spit which had been cleared off building ground in various parts of the district—now and then very sandy, occasionally of a stiff and unctuous clayey texture, with here and there a lot of brick rubbish; in short, a mixture of the better kinds of earth and rubbish which are so easily obtained in a suburban or other district where much building is going on. The border is about four feet in depth. No manure is mixed with its ingredients, except what little may descend from the remains of the annual winter covering of stable manure with which it is protected during the winter and early spring months. The house is 89 feet long by 18 feet wide, span roofed, and heated with hot-water pipes. The vine enters at the middle of one side, and goes across the roof, making five equal breaks, or, in other words, sending five fine opposite branches to each end of the house, the base of the main stem being of great thickness for a vine which has not been planted ten years. It quite fills the house, and would no doubt furnish three times the superficies it now does if the house and border were sufficiently extended. At the time of our visit it bore about 300 magnificent bunches of grapes, running from 2 lb. to 5 lb. weight each. What struck us as most remarkable was that the bunches were equally fine all over the house, the lowest and farthest extremities of the building exhibiting bunches as heavy and as fine as the highest and most favorable parts. Usually, with ordinary vines, much discrepancy occurs between the bunches on the same rod. It is doubtful if such a crop of heavy bunches was ever before shown by one plant, as however large we may grow the poor Syrian and other grapes, of large bunch but inferior quality, to obtain such bunches as these of the Black Hamburgh, even on a vine of the ordinary size, is considered very good work. The attainment of the result we have mentioned by simple means is well worthy of record. It surely proves that vine culture of the highest character is a much more simple affair than amateurs and many practical horticulturists believe it to be. There are many glass arcade roofs that might be highly embellished and rendered profitable by such a plant as this. If the amateur instead of building a few distinct small houses, would erect a good roomy one, and cover the roof with vines, it would give much more satisfaction than is often attained by those who have not much time or attention to devote to glass-houses. A large span-roofed vinery of the sort might be made to afford a very agreeable promenade in winter, a home for considerable quantities of green-house and bedding plants, shelves for early-potted strawberries on each side, room for a fine bloom of chrysanthemums in autumn, and not a few other things for which special structures are often provided. In summer, when the fruit would be ripening, and the foliage occupying the roof, we care very little for the indoor garden, and are usually too glad to leave it, while the plants we have named must, for the most part, be out of doors or in frames.—*The Field.*

Hints on Plant-Growing in Living-Rooms.—Many persons are either deterred from, or misled in, growing plants in living-rooms by reading the lugubrious nonsense written about the danger of keeping plants in such situations after nightfall, or in perusing the mystified directions given from time to time for their cultivation under the head of "Window" or "Indoor Gardening." Such instructions, for the most part, consists of *nostrums*, *secrets*, and *tricks*, which are not only pernicious, but silly, and tend to puzzle and perplex the inexperienced, by creating a belief that there is much more art in growing plants in such situations than there really is.

But as the former of such statements may with propriety be placed in the category of *absurdities*, so may the latter instructions be transferred to that of *twaddle;* for the principal cause why plants in living-rooms do not thrive so well as those which are kept in plant structures, is chiefly owing to the extreme dryness of the air in sitting-rooms, and consequently their being subjected to a constant drain upon the moisture in their leaves and the soil in the pots —the leaves under such circumstances being deprived of their water by evaporation instead of by perspiration; and in the exercise of their absorbent functions being more or less disarranged from a deficiency of moisture in the air, for all plants are more or less dependent upon the vapor in the atmosphere as a source for their healthy development.

Much, however, depends also upon the suitableness of the plants selected for the purpose, and the regular attention given to them, especially during the winter months; for it is an unquestionable fact, that plants in sitting-rooms require greater care and attention, and suffer more from neglect during the dull months, from November to February, than at any other period of the year. Therefore the first thing to do in cultivating plants in living-rooms is to determine what are the most suitable kinds for such a situation; and the more select they are, according to habit and culture, the easier will be their treatment. Plants of low and humble growth should always be kept in the front, and close to the glass, while the larger growing ones may be elevated behind; and in order to favor in the greatest degree possible the harmonious growth of the plants, and obtain a uniform development of the branches and leaves, the position should be capable of admitting light as much as possible on all sides; and the best and only general rule that can be adopted is to keep those plants not in a growing state rather dry, for plants kept in sitting-rooms generally are over-watered; and it is not an uncommon thing to see plants flourishing in the window of a dwelling under the care of an uninitiated individual, while those under the charge of others, in adjoining houses, only linger out a miserable existence, and which frequently is occasioned by the plants being kept standing in pans, into which the water is poured when the plants are supposed to require watering; whereas, whenever water is given, it should be gently poured on the top of the earth, in the pot. But as it is indispensable to have pans under the pots in sitting-rooms, small pans should be turned upside down within them, upon which to place the plants, and this precaution will prevent such water as may percolate through the soil from again reaching the pot in which the plant is growing; and all cultivators of window plants will find it by far the safest plan to give too little rather than too much water during the winter time, for the plants themselves will give notice when they are in much want of water by their leaves beginning to droop, while the effect of over-watering is oftentimes not discovered till the health of the plant has been seriously affected; therefore attention to this point is one of the most important in window gardening. It is, however, impossible to say how often plants should be watered, or how much at a time should be given them, as the same plant would require more or less according to circumstances; that is, in regard to the temperature of the room, and the degree of activity with which the plant may happen to be growing at the time. It must also be observed that the temperature of the water used in watering the plants should be at least equal to that of the room, and when the plants begin to grow in the spring, increase the quantity with growth and sun's power, keeping the soil at all times in a medium state of moisture. Many cultivators are quite unconscious of the injury plants receive by a sudden change from that state in which they have been long kept to one of an

opposite tendency—such as from drought to a bountiful supply of moisture, or from dark to light, such as placing plants out in the sun without their being first gradually inured to the light and air. Again, in winter, plants are frequently kept in too warm a part of the sitting-room, for they need not be removed from the window during frost, unless it be very severe, and then being placed on the floor near the middle of the room and covered with a piece of baize will suffice, as they will be safe where water placed beside them merely begins to freeze. Camellias, and similar hard-wooded and stiff-leaved plants, will even bear the soil in the pots being a little frozen; and frequently the cause of camellias losing their blossom-buds is from their being kept in too warm a part of the sitting-room in severe weather, and consequently in too dry an atmosphere. Finally, you must never let plants suffer from neglect. Many persons let them dwindle or die by forgetting to water them at the proper time, or shelter them from excessive sun-heat and frost. Again, without training and pruning, nothing is brought to the highest state of perfection to which it is capable, for cultivation is necessary in order to exhibit the good to which every earthly nature is susceptible. Therefore stopping and training must be attended to during the growing season, as well as repotting in the spring.—*Floral World.*

American Pomological Society.—The official report of the Eleventh Session of the American Pomological Society, held at St. Louis last September, is before us. It makes a volume of over two hundred pages, exclusive of the catalogue, is printed on good paper and in bold, clear type. In the value of its contents matter it is perhaps superior to any previous report; indeed, the address of the President, together with the essays of Meehan, Saunders, and Feudler, contain so much of valuable information that its possession should be had by every fruit-grower. The reports from committees and individuals in various States are full of items of import, and we shall at a future time give extracts therefrom. To those who are interested in the progress of fruit culture in our Southern States, and the varieties best adapted there, this report contains very valuable and detailed information. Utah Territory and Canada are also reported from, giving us records of new fruits, and showing that not alone are the members of the old States alive to progress. The Treasurer, Thomas P. James, Philadelphia, has copies to supply all who choose to become members of the Society.

Fruit Premiums at Exhibitions.—Extracts from awards of premiums on fruits at horticultural exhibitions as recommendations of their value by interested dealers has become so general in use that it has come to be an abuse, which should either be at once checked by severe criticism, or else societies should instruct their committees in some formula of guidance toward prevention of the use of said committee's report without the fruit being every way worthy of the money, time, and labor of the fruit-growing public.

We have known three specimens of a new variety of fruit receive a first premium, because those specimens happened to be the best of their kind in the list exhibited, not because they were better than any other kind grown and perhaps known to the committee, but simply because they were the best at that time exhibited with which to compare. The report of the committee was then extracted from by dealers, and a nearly worthless fruit palmed on the public over the names of men as the committee no one of which could be got privately to speak of the fruit as at all worthy of cultivation. But what could they do? The society had no rule except to report on the best exhibited, and award the premium. The same sort of thing is being continually repeated, and yearly our fruit-growing novices are led into expense

of time, money, labor, and disappointment, when a little timely care in the preparation of restricting rules by societies for committees' observance would prevent it. So much has this come to be a part of some exhibitor's schemes looking forward to the use of the committee's report as an advertisement afterward, that we know of several good horticulturists unwilling to act upon committees, and often keeping away from the exhibition until a late hour from fear of being called upon to serve, and thus have their name and reputation erroneously placed before the public.

Now, in the season of exhibitions, when all are engaged, we call the attention of managers of horticultural societies to the subject, and ask of them, for the credit of their associations, the reputation of their fruitmen, and the great cause of pomology and general good of the country, to act at once either in some united rule—or each for itself—any way, we care not how, so that there be some stop to the use of a leading society's or a good, honest fruitman's name being attached, by means of an extract, to puff into sale any fruit not thoroughly known as of real value when obtained.

Scraps from my Note Book.—*Thornless Raspberry.*—I know not what is the precise character of the Davison Thornless Raspberry, but I have one now growing in my ground, of the Black Cap family, the canes very strong, free of spines, and that ripens its fruit quite early. I hope to examine it with the Davison this year, when I shall know if it is identical. But a thornless raspberry is no great novelty, and unless the quality of the fruit is superior, I do not see that it has any great claim to cultivation.

Strawberry.—I have about fifty varieties, which I have been examining from day to day the past two weeks. Although Ida is condemned by one writer, and Agriculturist by others—La Constante praised by some, and others give preference to Jucunda—I think all have some good qualities, but not sufficient to keep them long in general cultivation. Downer's Old Seedling furnishes me the earliest berries and the most quantity at a time; and although they are not very sweet, yet there is a rich sprightliness about them that I find my family all like, with the addition of a little sugar and cream.

Bottom Heat and Tomato Plants.—I have failed with tomato plants started in the green-house. The first start is all right, but they do not continue to grow, and when set out in the open ground grow beautifully less from day to day. I imagine bottom heat, not general temperature, is what they need, unless I could keep them up continuously to a high temperature until midsummer. Looking back over some of my old notes, I find similar results and experience years agone.

The Currant Worm.—I must watch daily and carefully for the first appearance of this destructive insect, and at once use powdered hellebore. Neglected it this year, and had my bushes nearly stripped of all their foliage. E.

Alton (Ill.) Horticultural Society. Varieties of Apples, Good Cider, etc.—The reports of the regular meetings of this wide-awake Society always afford us items of valuable knowledge. The secretary will please accept our thanks therefor. At the meeting April 2d, we notice that Mr. Hilliard, after an experience of thirty-three years, recommends the following three as the best and most profitable varieties of winter apples for that section, viz.: Rawle's Janet, Gilpin, and Winesap. In planting on the level prairie, he plants shallow and plows up to the trees, so that they will be on a ridge and keep dry.

Mr. Hilliard makes the most of his winter apples into cider, and finds it the most profitable way of disposing of them. His practice in the making is as follows:

For good cider, late keeping, sound fruit is required; add two ounces of sugar to a gallon of cider, or five pounds to a forty-

gallon barrel. It will ferment better and be cleaner. Granulated sugar is best. It should be added as soon as the cider is barreled. As soon as it goes through its fermentation, say in eight days, it should be racked off from the sediment and put into the cellar. It should be racked off again in January, and sometimes a third time in the spring. Whisky barrels are best.

President Starr said, to prepare new oak barrels for cider or wine, use one pound of alum and four or five pounds of salt to four bucketfuls of water, heat boiling hot and put one bucket at a time in the barrel, rinse thoroughly, let it stand an hour, turn it out, and repeat the operation with another bucketful. Finally, rinse with cold water, and fumigate with sulphur, and it will be all right.

Ripe Fruit a Preventive of Disease.—Good old Doctor Kennicott, well known by a large number of our Western readers, used to say to us that in his practice of medicine he found his calls upon a family reduced in proportion as they came into the daily use of good ripe fruits, from strawberries onward; and it was with this practical knowledge gained from an extensive and daily ride over the Western rich prairie lands that he came in all his after essays, addresses, and writings to continuously and urgently advocate the use of ripe fruits as a daily food. Charles Downing, whose life held upon threads thirty years ago, and whose acquaintance at that time doubted his living from year to year, attributed his years of continued activity and usefulness in a great measure to the free and steady use of ripe fruits. Prof. J. P. Kirtland, in a medical practice of nearly half a century, says the habitual use of well-ripened fruits always assisted toward renovating, as well as continuing, the health of his patients; and from his knowledge thereof he has practiced and preached the extended and improved cultivation and use of all good fruits.

Understand, these men advocate ripe, sound, healthy fruits; not strawberries mashed, jammed, and sour from long keeping; not early apples picked green in Tennessee or Kentucky, and yellowed in the box during transhipment; not peaches picked just as they are colored, and offered for sale with one side as hard as a stone and the other side almost rotten; not grapes which have molded in the package, and been washed off, trimmed, and made ready for sale by the dealer, who cares only for his money, and has no thought how big a fool you may be to buy them. No; all this kind of fruit does not come into the list which sensible men as we have named would use or advise; but it is the *ripe, sound, fresh* fruit, either direct from the vine or tree, or as near thereto as possible, which contains within itself food corrective and nourishing to the human system. Buy, therefore, and eat only of this. Use fruit freely at each and every meal; eat it before breakfast and with your meals; let the children eat when and as they will, but only of fruit *perfectly* sound and ripe; a rotten, specked, moldy, or half-decayed fruit is almost poison. If you buy or grow and eat really ripe and sound fruit, your health and that of your children will be advanced; but if you eat—no matter whether it cost you money or be given you—unripe or partially decayed fruit, you sow the seeds of disease that may exhibit growth in a night, and may not in months; but sooner or later the poor fruit will tell its tale in your blood and bones, with pains and aches, as the good will in vigor, activity, and general good health.

July the Month to Prune Apple-Trees for the North and Western States.—We are aware that many advocate pruning in the spring, especially when increased vigor is desired to be given to the tree; but we confess that careful observation for many years has taught us that we really gain little on that score, and that in ninety-five cases out of every hundred we

induce a cankered diseased wound, a tendency to water-sprouts, or great increase of sucker shoots. Very late fall or winter pruning generally results in a wound that dries and cracks, and requires two or more years to heal over, and in extreme cold sections we believe renders the whole system of the tree more sensitive.

The month of July, however, is one in which the tree is making a rapid but healthy growth, with fully formed foliage to elaborate its sap, and a wound then made rapidly heals and is soon covered by the well-digested layers of new bark and wood which the tree is then in the natural course of its life increasing. Again, at this time the drain of foliage on the roots, in case of a little drought and by reason of the heat and rapid evaporation, is lessened by the removal of a part of the surplus foliage, and hence the whole health and life of the tree is increased and added to rather than lessened or rendered diseased as is the fact when spring pruning is practiced.

Kenosha (Wisconsin) Horticultural Society.—This young and energetic Horticultural Society bids fair to outstrip all the Eastern associations in their exhibitions. Their first show was on the 25th and 26th of June, at which a most extended and liberal list of premiums was offered, encouraging to the lovers of flowers and fruits, and retentive of character in the holding of the diploma of the Society as above money values. We tender our thanks for the introduction of our journal to the list of premiums. We shall use our best endeavors to make it of value to the recipients.

Hardihood of Hollyhocks.—A correspondent suggests, or, rather, says, that we are wrong in classing the hollyhocks in our last number as perfectly hardy, because he says that "while young plants will winter perfectly, the second and third winter generally finds them all destroyed." Our reply is: the hollyhock propagates itself from year to year like the Alpine strawberry, or other perennial, by offsets from sides of the main plant, leaving the center or crown plant to die out; and if these offsets are permitted to remain attached to the main plant, their exhaustion of the surrounding soil and consequent loss of vitality renders them less capable of enduring severity of temperature, and therefore death. If, however, the young plants or offsets be taken from the parent plant and replanted in good soil, from year to year, they are perfectly hardy, and will endure as much as the young seedling. We will only add, that a safeguard to old plants, whose center crowns have flowered and died, and are now dependent upon the support of the offsets, should have yearly a mulch of leaves or straw applied in autumn around them, which will, to some extent, answer the purpose of renewal by transplanting. The season of growth is however now about commencing, and we advise those who have old roots of the hollyhock to take them up, and separate and transplant them as early in the season as the ground will admit of being worked.

Sweet Corn.—Never forget to plant sweet corn in July. We always plant some each week in the month, and the result is we have it into frosty weather; and our last ears we cut up with the stalk and stack them in small shocks, to pull from even into December, near upon Christmas time.

Liquid Manure.—Any manurial matters can be, to a more or less extent, dissolved in water for the production of liquid manure, and the strength of the material used must regulate the quantity of water applied, and the nature of the plants to be fed with it. The following proportions, taken from the London *Gardener's Magazine*, are considered useful mixtures: One part by weight of fresh cow-dung to six parts by weight of water; stir, and leave it some hours to settle; use only the clear liquid. The drainage from the stable and cow-house is a most valuable basis for liquid

manure; add to it eight parts of water. The brown liquid that flows from new dung-heaps is to be used in the same way. One part of fowls dung to eight parts of water; sulphate of ammonia, half an ounce to every gallon of water; guano, an ounce to the gallon of water. In all cases it is best to give liquid manures weak, and especially at first. If it is intended to give a plant strong doses, a few weak ones should be given first to prepare it; but to be always weak is much safer and more beneficial in the end, for an overdose will cause the leaves to fall or become blotched, and do other injuries that need not be enumerated.

The Best Stock to Bud the Cherry upon.—Considerable discussion has been had in the Western horticultural papers relative to the comparative values of stocks for working the cherry so as to insure hardy, healthy, and productive trees. The result of it all appears to confirm the views of Mr. F. R. Elliott, put forth some years since, that the *seedling* Morello is the stock on which to secure a moderate growth, with hardihood and productiveness increased. Morello suckers will, like Mazzard suckers, if used as stocks, continue to sucker, and while rendering the ground unsightly, reduce the vigor and health of the main tree. The Mazzard and Mahaleb both give too strong growth during the first two or three years, to render the wood of a sufficiently close texture to endure the severe and extreme changes of heat in summer and of cold in winter; while in the Northwest the roots even of both varieties are sometimes killed in winter.

Penstemons.—Every lover of flowers should pay attention to the penstemon, as one of the best and most continuous in blooming of all perennials. It is of easy culture, and perfectly hardy. As we write (June 6th), we have before us in our garden blooms of one received under the name of *Grandiflora*, which is pure white, and with the fragrance of violets.

New Seedling Cherries for the West.—We suggest to our Western fruit-growers, gathering the pits of Louis Philippe, Early Richmond, Donna Maria, Belle Magnifique, Hortense, and other varieties of like habit or class, and grow new seedlings. If only one in a thousand prove of great value, there is a prospect that two thirds of the balance will prove as good as the Early May now grown, and all will certainly answer for stocks on which to bud.

Blossoming of Peas.—In our garden this season, out of fourteen varieties of peas planted the same day side by side, Carter's Early was the first to bloom and set its fruit; Waite's Caractacus was the second; while Little Gem and Dan O'Rourke were next, closely followed by McLean's Advancer. When we plant again, our choice will be for the first two and the last-named varieties.

BOOK NOTICE.

Delaware, the Garden State of the Union.—This is the title of a neat pamphlet of 62 pages, edited and published by Henry T. Williams, of the New York *Independent*. Mr. Williams last season spent considerable time in traveling through the State of Delaware and gathering facts concerning the adaptability of the soil to fruit culture, as well as the general resources of the State, all of which he has here given. The New York markets have, for years past, been mainly supplied with early peaches from Delaware; but it is only a comparatively short time since the attention of growers has been given to the cultivation of the smaller fruits, to which the soil and climate are so well adapted. Large profits have been realized by those who cultivate well, and it is only those who should undertake fruit culture even in Delaware. The pamphlet contains many items of information for those seeking a location for fruit culture, and to such we commend it. Price, 50 cents.